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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Song K. Jung, Esq. McKenna Long & Aldridge LLP 1900 K Street, N.W. Washington, DC 20006-1108				
EXAMINER				
LEE, CHEUNG				
ART UNIT		PAPER NUMBER		
2812				
MAIL DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,592

Applicant(s)

BUREAU ET AL.

Examiner

CHEUNG LEE

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 13-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Notice to Applicant

1. Applicants' Amendment and Response to the Office Action mailed on July 18, 2007 has been entered and made of record.

Response to Amendment

2. In view of applicants' amendments and arguments filed on December 17, 2007, the rejections of claims 1-5, 7-8 and 10-12 under 35 U.S.C. 102(b) or 103(a) as stated in the indicated Office Action have been withdrawn. Applicants' arguments have been rendered moot in view of the new or modified ground of rejection given below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-5, 8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusano et al. (US Pat. 5284543; hereinafter "Kusano") in view of Lou et al. (NPL: "Electrografting of Preformed Aliphatic Polyesters onto Metallic Surfaces," American Chemical Society, 3/7/2002, pages 2785-2788; hereinafter "Lou").

4. Referring to figure 1 and related text, Kusano discloses [Re claim 1] a method of bonding (col. 1, lines 34-45; col. 3, line 66-col. 4, line 4) a first object having a polymer surface (col. 4, lines 5-55) together with a second object having an electrically conductive or semiconductive surface (col. 5, lines 4-10), the method comprising the steps of: a) polymerizing an organic film onto conductive or semiconductive surface of the second object (col. 2, lines 45-64); and then b) bonding the polymer surface of the first object to the conductive or semiconductive surface of the second object thus grafted (col. 3, line 66-col. 4, line 4), but Kusano fails to disclose expressly wherein a) electrografting an organic film onto the conductive or semiconductive surface; and [Re claim 2] in which the electrografting of the organic film is electroinitiated grafting.

Lou discloses [Re claim 1] an electrografting process of [Re claim 3] a polymer film onto a metallic surface (see first column in page 2785). The electrografting process proceeds via [Re claim 2] an electrochemical initiation (see first column in page 2785).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use an electrografting process of a polymer film, as taught by Lou,

because it would have been to improve adhesion of an organic coating onto a metal, and to improve aging resistance of the metal/polymer interface (Lou, see first column in page 2785).

5. Kusano discloses [Re claim 4] in which the polymer film is obtained from compounds selected from the group consisting of monomers and prepolymers that are partly or completely functionalized by vinyl group (col. 2, line 66-col. 3, line 15).
6. Kusano discloses [Re claim 5] in which the polymer film is obtained from a vinyl monomer selected from the group consisting of acrylonitrile, methacrylonitrile, acrylates and methacrylates, acrylamides, methacrylamides, cyanoacrylates, acrylic acid, methacrylic acid, styrene, vinyl halides, N-vinylpyrrolidone, 2-vinylpyridine, 4-vinylpyridine and vinyl-terminated telechelic compounds (col. 3, lines 1-15).
7. Kusano discloses [Re claim 8] in which the bonding consists of hotmelt bonding or cold bonding or a combination thereof (col. 1, lines 5-10; col. 5, lines 10-14).
8. Kusano discloses [Re claim 10] in which the polymer constituting the polymer surface is selected from the group consisting of polyethylenes, polypropylenes, polystyrenes, polyacrylonitriles, polysiloxanes, polyesters, polyorthoesters, polycaprolactones, polybutyrolactones, polyacrylics, polymethacrylics, polyacrylamides, epoxide resins, copolymers thereof and blends thereof (col. 4, lines 5-55).
9. Kusano discloses [Re claim 11] in which the polymer constituting the polymer surface is a hotmelt polymer (col. 4, lines 56-65).

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10. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Kusano in view of Lou as applied to claim 1 above, and further in view of Naarmann (US Pat. 4547270).

11. [Re claim 7] The combined teaching of Kusano and Lou fails to disclose expressly in which the organic film is obtained from diazonium, sulfonium, phosphonium or iodonium salts, or mixtures thereof.

Naarmann discloses an electrochemical polymerization of pyrrole with phosphonium salts on an anode sheet (col. 1, lines 5-50).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use phosphonium salts to obtain an organic film, as taught by Naarmann, because it would have been to obtain high electrical conductivity, good thermal stability and stability to oxygen (Naarmann, col. 1, lines 51-54).

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusano in view of Lou as applied to claim 1 above, and further in view of Capote et al. (US Pat. 6335571; hereinafter "Capote").

13. [Re claim 12] Kusano fails to disclose expressly in which the polymer surface is a polymer film coating a conductive or semiconductive material.

Referring to figures 10-12 and related text, Capote discloses wherein a semiconductor chip 100, which is coated with a liquid polymer resin 111, and a substrate 101 coated with a polymer flux 109 are bonded together (col. 8, line 61-col. 9, line 20; see fig. 10).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a polymer film coating a conductive or semiconductive material to bond onto a base, as taught by Capote, because it would have been to obtain a semiconductor chip on a substrate with a polymer as an adhesive.

Allowable Subject Matter

14. Claims 6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: claim 6 recites the polymer film is obtained from compounds selected from the group consisting of monomers and prepolymers that are partly or completely functionalized by cyclic groups that can be cleaved by nucleophilic or electrophilic attack.

Claim 9 recites the cold bonding is carried out by means of a substance capable of dissolving or swelling the polymer surface to be bonded and the organic film electrografted onto the conductive or semiconductive surface.

These features in combination with the other elements of the base claim are neither disclosed nor suggested by the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHEUNG LEE whose telephone number is (571)272-5977. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cheung Lee

March 15, 2008

/Michael S. Lebentritt/
Supervisory Patent Examiner, Art Unit 2812